



*City of Jeffersonville*  
WASTEWATER DEPARTMENT  
423 Lewman Way, Jeffersonville 47130  
PH: (812) 285-6451

## MEMORANDUM

**TO: DAVE TENNIS**

**FROM: LEN ASHACK**

**DATE: MARCH 29, 2019**

**RE: CLARIFICATIONS TO THE MEMO DATED NOVEMBER 20, 2014 REVISED DECEMBER 4, 2014  
AND RESPONSE TO MARCH 20, 2019 EMAIL FROM DAVE TENNIS**

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The purpose of this memo is to provide clarifications and updates to the costs of the alternatives identified in the 2014 Executive Summary dated November 20, 2014 and Revised December 4, 2014.

The 2014 executive Summary mentions in several locations that the Consent Decree would be renegotiated. Since the Consent Decree does not specifically identify the projects identified in the LTCP, the Executive Summary should have stated that the LTCP would be renegotiated not the Consent Decree. The Consent Decree was signed before the LTCP was developed and approved as the Consent Decree was a Develop and Implement Decree.

The City through its consultants evaluated several "scenarios" which were as follows:

- Scenario A 60-in diameter sewer for both the East/West and the North/South which the model predicted would result in four (4) overflows to the Ohio River and eight (8) overflows to Cane Run
- Scenario B 72-in diameter sewer for both the East/West and the North/South interceptor which would result in three (3) overflows to the Ohio River and six (6) overflows to Cane Run.
- Scenario C 84-in diameter sewer for the north-south interceptor and a 72-in diameter sewer for the east/west interceptor which would reduce the level of controil to three (3) to the Ohio River and five (5) to Cane Run.
- Scenario D 84-in diameter sewer for both the East/West and the North/South interceptor which would result in two (2) overflows to the Ohio River and five (5) overflows to Cane Run.

In the discussion of the Scenario, the discussion of the erroneously identified Scenario B as a 72-in x 60-in. The 2014 evaluation of additional alternatives did not evaluate a 72-in x 60-in option. It should have read as a 72—in x 72-in.

In the March 20, 2019 email, there were several questions regarding the modelling and when the resultant CSOs would occur and asked for updated costs for the four (4) Scenarios in the 2014 Executive Summary. All of the questions were answered except for the updated cost of the four (4) scenarios in a March 22, 2019 email to you.

In response to the request for updated costs of the scenarios from Table 1 of the 2014 Executive Summary, I have included Table 1 from the Executive Summary and an updated Table 1 below.

**December 4, 2014  
Revision**

**Table 1 form 2014 Executive Summary**  
**Downsized CSO Storage Interceptor Cost Evaluation**

Project Phase	Scenario				
	80% Design	A (60"x60")	B (72"x72")	C (84"x72")	D (84"x84")
Phase 2	\$	Exs. 4 and 7A			
Phase 3	\$				
Subtotal	\$				
Resulting CSO's	1/3	4/8	3/6	3/5	2/5
WWTF to Achieve 1/3 CSO's		Exs. 4 and 7A			
Total	\$				
Resulting CSO's	1/3	1/3	1/3	1/3	1/3

\*Cost Estimate Interpolated based on MGD.

**March 26, 2019**

**Updated Table 1**  
**Downsized CSO Storage Interceptor Cost Evaluation \*\***

Project Phase	Scenario				
	80% Design	A (60"x60")	B (72"x72")	C (84"x72")	D (84"x84")
Phase 2	\$	Exs. 4 and 7A			
Phase 3	\$				
Subtotal	\$				
Resulting CSO's	1/3	4/8	3/6	3/5	2/5
WWTF to Achieve 1/3 CSO's		Exs. 4 and 7A			
Total	\$				
Resulting CSO's	1/3	1/3	1/3	1/3	1/3

**\*\* The costs that were arrived at in 2014 to 2018 dollars by using the inflation ratio from Engineering News Record (ENR) construction costs indices (CCI) published by ENR. For year 2014, the CCI was 9806.52, and for 2018, it was 10,883.52. The inflation ratio results in 1.11%.**

**E. b. Project Cost Estimate:** Include estimates for ALL projects identified in the Project Information, Section III, A.

*Indicate estimates for each project. Please attach additional sheets if necessary. CSO Interceptor*

**Estimated Construction Costs:**

(I) Secondary Treatment	\$	—
(II) Advanced Treatment	\$	—
(III A) Inflow / Infiltration Correction	\$	—
(III B) Major Sewer System Rehabilitation	\$	—
(IV-A) New Collection Sewers	\$	—
(IV-B) New Interceptor Sewers	\$	—
(V) Combined Sewer Overflow Correction	\$	—
(VI) Storm Water Control	\$	—
(VII-A-K) Nonpoint Source Needs	\$	—
Contingencies	\$	—

**TOTAL CONSTRUCTION:** \$ —

**Estimated Non-Construction Costs:**

Reimbursement for Phase I Project	\$	—
Utility Relocation Allowance	\$	—
Financial	\$	—
Legal	\$	—
Engineering Planning	\$	—
Engineering Design	\$	—
Other Engineering Services	\$	—
(Describe: <u>Construction Engineering</u> )		
Other Non-construction Costs	\$	—
(Describe: <u>Repayment of BAN</u> )		
Land/Easement Acquisition: Ineligible	\$	—
Land/Easement Acquisition: Eligible	\$	—
<b>TOTAL NON-CONSTRUCTION:</b>	\$	—

**TOTAL PROJECT COST (Estimated):** \$ —

**Anticipated SRF Loan Amount (after other funding)** —

Exemptions 4 and 7A

The DWWTP Improvements include a 25 MGD CEHRC for Phosphorus removal and wet weather treatment, new blowers for the aerobic sludge holding tanks and 4 new 12.5 MGD Trojan UV units to increase the disinfection system to 75.0 MGD.

The CSO Interceptor Project included the 60-in interceptor from Graham to Wall Sts. (East/West) and a 72-in interceptor from Chestnut St. to 9<sup>th</sup> and Indiana Ave. (North/South).

The Total amount of

*Exemptions 4 and 7A*

City's Financial Consultant is currently revising the Financial Capability Assessment (FCA) to reflect both the LTCP (CIP) Costs for both the LTCP Projects and the proposed projects as presented in the December 24, 2018 Letter from Michael Gillenwater to Lila Jones.

Please let me know if you have any questions. Thank you.



The City has applied to the Indiana Finance Authority's State Revolving Fund for a loan to implement the Revised LTCP Projects.

The City has applied for the following loans

Indicate estimates for each project. Please attach additional sheets if necessary. DWWTP Improvements

**Estimated Construction Costs:**

(I) Secondary Treatment	\$	
(II) Advanced Treatment	\$	
(III A) Inflow / Infiltration Correction	\$	
(III B) Major Sewer System Rehabilitation	\$	
(IV-A) New Collection Sewers	\$	
(IV-B) New Interceptor Sewers	\$	
(V) Combined Sewer Overflow Correction	\$	
(VI) Storm Water Control	\$	
(VII-A-K) Nonpoint Source Needs	\$	
Contingencies	\$	
<b>TOTAL CONSTRUCTION:</b>	\$	

**Estimated Non-Construction Costs:**

Financial	\$	
Legal	\$	
Engineering Planning	\$	
Engineering Design	\$	
Other Engineering Services	\$	
(Describe: <u>Construction Engineering</u> )		
Other Non-construction Costs	\$	
(Describe: _____)		
Land/Easement Acquisition: Ineligible	\$	
Land/Easement Acquisition: Eligible	\$	
<b>TOTAL NON-CONSTRUCTION:</b>	\$	
<b>TOTAL PROJECT COST (Estimated):</b>	\$	

**Anticipated SRF Loan Amount (after other funding)**

Exemptions 4 and 7A

## Len Ashack

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**To:** Len Ashack  
**Subject:** RE: Jeffersonville - Next Steps

**From:** Len Ashack  
**Sent:** Friday, March 22, 2019 2:26 PM  
**To:** 'TENNIS, DAVE' <DTENNIS@idem.IN.gov>  
**Subject:** RE: Jeffersonville - Next Steps

Dave

Sorry for the delay in responding. Its Spring Break and people tend to head south for the week. I will have our engineers work on the cost update as soon as they are able.

We really need to have a conversation about Cane Run at some point.

Have a good weekend and go golfing

Len Ashack | Director

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-----Original Message-----

**From:** TENNIS, DAVE [<mailto:DTENNIS@idem.IN.gov>]  
**Sent:** Wednesday, March 20, 2019 12:34 PM  
**To:** Len Ashack <[lashack@CityofJeff.net](mailto:lashack@CityofJeff.net)>; Higginbotham, Paul <[PHIGGINB@idem.IN.gov](mailto:PHIGGINB@idem.IN.gov)>  
**Subject:** RE: Jeffersonville - Next Steps

Thanks for sharing this email string Len, and we look forward to getting the alternatives information from you. We assume the information you provide will have costs associated to each alternative you evaluated? **The City has not updated the costs of the four (4) scenarios. The City through its consultants will update the cost of the four scenarios within the next two (2) weeks using the most recent estimated construction costs.**

A follow-up question related to modeling:

Has Jeffersonville provided, or have access to, modeling information that predicts when/what time of the year the proposed CSO activations are expected to occur to both Cane Run and the Ohio? **The typical year has the storm event and when they occurred. Given that the typical year events where in 2000. And it is now 2019 I would think that the typical year may have changed. See below.**

Will the expected events all occur during the recreational season (April- October), or are some events expected to occur outside of that timeframe? If so, how many? David that question was answered in part in the City's response to EPA's April 20, 2018 Letter, dated May 11, 2018. To summarize the 2009 LTCP project would result in 3 Events from the system during the recreational season whereas the proposed alternative would result in 6 Events. See Attachment

I have looked through my file for this info and have come up empty....if you have proved this please guide me to the appropriate document....Such information will be helpful as we discuss finalization of this process with EPA/DOJ, as well as good info to have as we go to the judge to get the CD/LTCP modified. David, the City's position is that since the CD required the development and implementation CD in regard to the LTCP, is that the CD does not have to be modified only the LTCP as long as the LTCP projects achieve full operation by June 1, 2025 since Jeffersonville is a high burden community. The CD contained Appendix E which delineated the SEPs to offset the civil penalties in the CD. EPA modified the Federal SEP to replace the SEP delineated in Appendix E.A which a restoration of a wetland with a five (5) year monitoring program. The modification was in the form of a letter dated November 26, 2013. In addition, in a EPA letter dated January 23, 2013 they approved a revised schedule for the CSO Interceptor and the Tenth St. Phase II sewer separation.

Thx, DT

-----Original Message-----

From: Len Ashack [mailto:lashack@CityofJeff.net]

Sent: Wednesday, March 20, 2019 9:43 AM

To: Higginbotham, Paul <PHIGGINB@idem.IN.gov>; TENNIS, DAVE <DTENNIS@idem.IN.gov>

Subject: Fwd: Jeffersonville - Next Steps

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CEHRC units.

8. Please provide other engineering solution alternatives to reduce the proposed frequency of overflows and the reductions in each alternative scenario.

*Section 8 of the LTCP presented a very detailed Alternative Analysis that identified and evaluated multiple alternatives. These were developed in detail, presented to the Citizens Action Committee (CAC) for discussion during the Public Participation meetings. The Alternatives included:*

1. Total Sewer Separation;
2. Tunnel Storage;
3. Wet Weather River Pump Station;
4. Near-Surface Storage;
5. Redirect River CSOs to Cane Run; and
6. No Action

*Following extensive analysis, public participation, and engineering discussions, Alternative 4, Near-Surface Storage was selected as the preferred alternative. This alternative remains the preferred alternative even with the improvements (CEHRC and reduced size of the transport/storage interceptor) in lieu of the larger diameter storage interceptor.*

9. Please provide the following information for the current and proposed scenarios at the Downtown WWTP during the typical year.

Information	Current scenario per LTCP	Proposed scenarios (Addition of a 25 MGD CEHRC Unit and 25 MGD UV expansion)		
	Up to 50.0 MGD Flow	Between 0.0 and 25.0 MGD Flow	Between 25.0 and 50.0 MGD Flow	Between 50.0 and 75.0 MGD Flow
Percent captured for treatment on a system-wide annual average basis	96.9%	100% <sup>(1)</sup>	100% <sup>(1)</sup>	95.3% <sup>(2)</sup>
Frequency of overflows per CSO outfall during the disinfection season	3 Events	0 Events	0 Events	6 Events
Frequency of overflows per CSO outfall during the non- disinfection season	0 Event	0 Events	0 Event	0 Events
CEHRC effluent concentration in terms of CBOD5, TSS and TP	N/A	CBOD: 10 mg/L <sup>(3)</sup> TSS: 10 mg/L <sup>(3)</sup> TP: 0.5 mg/L <sup>(3)</sup>	CBOD: 10 mg/L <sup>(4)</sup> TSS: 10 mg/L <sup>(4)</sup> TP: 0.5 mg/L <sup>(4)</sup>	CBOD: 48 mg/L <sup>(5)</sup> TSS: 20 mg/L <sup>(5)</sup> TP: 0.5 mg/L <sup>(5)</sup>
CEHRC percent removal in terms of CBOD5, TSS and TP	N/A	Tot CBOD:95%; ParCBOD:95%; TSS:95%; TP:95%	TotCBOD:95%; ParCBOD:95%; TSS:95%; TP:95%	TotCBOD:65%; ParCBOD:90%; TSS:90%; TP:90%
CEHRC solid retention time values	N/A	(6)	(6)	(6)
Particle size distribution of influent flow at the UV System	(7)	(7)	(7)	(7)

- (1) % captured is the volume of total flow captured for treatment from the combined sewer system which includes all events when the Tenth Street Lift Station pumps less than the 50 MGD capacity.
- (2) % captured is the volume of total flow captured for treatment from the combined sewer system which includes all events when the Tenth Street Lift Station pumps at the 50 MGD capacity.
- (3) CEHRC system will be operating in Tertiary Treatment Mode treating secondary effluent for flow between 0 and 25 MGD.
- (4) CEHRC system will be operating in Tertiary Treatment Mode treating secondary effluent for flow at 25 MGD. Additional 25 MGD secondary effluent flow will be bypassing the CEHRC system.
- (5) CEHRC system will be operating in parallel wet-weather mode at 25 MGD compared to WWTP flow at 50 MGD. Based on the average values of 2014, 2015, 2016 and 2017 MRO data for average daily flow greater than 15.0 MGD, the raw sewage quality entering the CEHRC will be CBOD:135 mg/L; TSS:200 mg/L; TP:3.0 mg/L. Effluent Values are estimated based on 65% BOD removal, 90% TSS removal and 90% TP removal.
- (6) Solids Retention Time in a chemical treatment system is not estimated. The CEHRC system is designed on hydraulic retention time. About 2% of influent flow is wasted as solids stream.
- (7) UV system will be designed with 50% UVT for a typical primary treatment effluent quality. Particle size distribution is not available from the UV manufacturers.

10. Please explain how the percent captured was calculated in your response to item 9, above.

*The percent capture was calculated by dividing the wet weather flow captured by the wet weather flow generated. The duration of wet weather flow included days with rainfall plus the day after rainfall (note three events included the second day after rainfall because WWTP flows were still significantly above average dry weather flows. The definition was further defined on page 8-25 of the LTCP.*

11. How much capacity to receive additional flow beyond 50 MGD do the existing oxidation ditches and clarifiers have?

*The existing oxidation ditches and the clarifiers are hydraulically rated at a max capacity of 51.5 MGD which includes 50 MGD plant influent flow and 1.5 MGD plant side stream flow from gravity thickeners and sludge dewatering units. Therefore, no additional capacity is available beyond 50 MGD.*

12. In addition to high rate treatment, please assess the feasibility, cost and expected performance of a HRT that has a biological component. If the existing oxidation ditches and clarifiers have additional flow capacity, that may be considered.

*The maximization of the secondary treatment processes to 50 MGD was completed during the last phase of the DWWTP expansion in 2012. Two (2) 25 MGD clarifiers were added in the 2012 expansion in addition to installing four (2) 200 HP Oxidation ditch mixers to meet the sustained wet-weather loading. An additional CEHRC system with biological component such as Veolia's Bio-Actiflo and Evoqua's Bio-Mag were evaluated. This alternative requires the addition of a 20 min biological contact tank for the raw sewage to be in contact with biomass at a mixed liquor concentration between 500 and 1,200 mg/L. This alternative would approximately cost around \$8,500,000 which is 50% more expensive compared to the currently proposed CEHRC system. Furthermore, the biological contact tank will be off-line during dry-weather days.*



Loan No.	Bond/SRF	Date of Loan	Principal Amount	Maturity Date	Projects
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					

Exemptions 4 and 7A